Application No. 10/602,515
Filed: June 24, 2003
TC Art Unit: 3744
Confirmation No.: 8865

REMARKS

Claim 1 is pending in the present application. The Examiner has rejected claim 1 under 35 U.S.C. § 103. Applicant has amended the specification and claim 1 herein. The amendments have support in the application such that new matter has not been introduced by Applicant. Applicant submits that claim 1 should be pending after entry of the amendments above.

The above amendments should not be construed as acquiescence to the rejections by the Examiner and were provided solely to expedite the prosecution of the application. Applicant reserves the right to pursue the claims as originally filed in the present or separate applications.

Applicant also requests reconsideration and withdrawal of the rejections by the Examiner based on the remarks herein.

Claim Rejections 35 U.S.C. § 103

The Examiner has rejected claim 1 under 35 U.S.C. § 103 as obvious based on U.S. Patent No. 4,824,454 to Kondo et al. in combination with U.S. Patent Nos. 5,195,577, 4,592,205 and 5,327,729. The system of claim 1 preserves a biological specimen via a cylinder and refrigerator. In general, the biological specimen can be cooled by supplying liquid nitrogen from the cylinder to a preservation chamber. As a result, temperatures for the preservation chamber are immediately reduced to -180°C or colder. When liquid nitrogen in the preservation chamber is vaporized to a gas, the gas can be condensed into a liquid using the refrigerator. As a level of liquid in the preservation chamber lowers beyond a predetermined value or should refrigeration be inoperative, the biological specimen can then be

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preserved by liquid nitrogen from the cylinder. The cylinder may also be refilled or exchanged with another as required for preservation.

By comparison, U.S. Patent No. 5,195,577 to Kameda et al. disclose a cooling medium of water and antifreeze liquid, which lowers freezing temperatures for the medium. For example, Kameda et al. suggest ethylene glycol as an antifreeze liquid for the cooling medium. Column 5 at line 26. Such a cooling medium of ethylene glycol differs from liquid nitrogen as required by claim 1. Indeed, Kameda et al. teach freezing temperatures in Figure 6 for an aqueous solution of ethylene glycol to be significantly higher than -180°C as indicated above for liquid nitrogen. Thus, Kameda et al. describe a cooling medium unrelated to that of the system in claim 1.

Kameda et al. also provide a device for cooling semiconductor switching elements during operation. Cooling semiconductor switching elements involves temperatures higher than -180°C. To the contrary, the system of claim 1 requires preservation of a biological specimen. Such preservation can comprise liquid nitrogen temperatures of -180°C or colder. These temperatures cannot be maintained through the device or cooling medium taught by Kameda et al. Furthermore, Kameda et al. lack suggestion of a refrigerator as required by the system of claim 1. Given that Kameda et al. describe a device without a refrigerator for cooling semiconductor switching elements in a cooling medium of ethylene glycol, the reference cannot be properly combined with Kondo et al. to render the system of claim 1 obvious.

In particular, Kondo et al. provide a device that includes a refrigerator. Kondo et al. also disclose that the device uses a

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liquid cryogen such as nitrogen. Such characteristics of the device taught by Kondo et al. are contrary to that described in Kameda et al. Thus, Applicant underscores that Kondo et al. cannot be properly combined with Kameda et al. to render the system of claim 1 obvious.

Lastly, Applicant indicates that U.S. Patent Nos. 4,592,205 and 5,327,729 to Brodbeck et al. and Yanai et al. also cannot be properly combined with Kondo et al. For example, Brodbeck et al. disclose a system for delivering liquid cryogen such as nitrogen to a container, which does not correspond to a cryostat as in Kondo et al. Moreover, Yanai et al. suggest an apparatus for producing liquid nitrogen that is entirely unrelated to a device for gas liquefaction and preservation of an element as described by Kondo et al. Based on the foregoing, Applicant submits that the rejections of claim 1 under 35 U.S.C. § 103 should be withdrawn by the Examiner.

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CONCLUSION

Based on the remarks presented herein, reconsideration and withdrawal of the rejections by the Examiner and allowance of the application with claim 1 are respectfully requested.

The Examiner is also encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the application.

Respectfully submitted,

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